WHAT IS CLAIMED IS:

1. A method for multi-objective portfolio optimization for use in investment decisions based on competing objectives and a plurality of constraints constituting a portfolio problem, the method comprising:

generating an initial population of solutions of portfolio allocations;

committing the initial population of solutions to an initial population archive;

performing a multi-objective process, based on the initial population archive and on multiple competing objectives, to generate an efficient frontier, the multi-objective process including a evolutionary algorithm process, the evolutionary algorithm process utilizing a dominance filter, the efficient frontier being used in investment decisioning.

2. The method of claim 1, wherein the multiple competing objectives are governed by risk and return measures.

3. The method of claim 2, wherein the multiple competing objectives are further governed by additional measures, in addition to the risk and return measures.

4. The method of claim 1, wherein the generating an initial population of solutions of portfolio allocations includes a process including:

systematically generating the initial population of solutions to substantially cover the entire risk/return objectives space; and

committing the initial population of solutions into an initial population archive.

5. The method of claim 4, wherein the generating the initial population of solutions uses a combination of linear programming and sequential linear programming algorithms.

6. The method of claim 1, wherein the evolutionary algorithm process includes creating a population of solutions of a certain cardinality by randomly drawing solutions from an initial population archive.

7. The method of claim 6, wherein the processing the population of solutions of a certain cardinality includes:

passing the population of solutions through a dominance filter;

identifying a non-dominated subset of the population; and

committing the non-dominated subset to a non-dominated solutions archive.

8. The method of claim 7, wherein the non-dominated subset is further committed to memory.

9. The method of claim 1, wherein the evolutionary algorithm process includes combining randomly matched pairs of parent solutions to create offspring solutions, and further includes:

passing the subset of offspring solutions through a dominance filter; and

identifying a non-dominated subset of the offspring solutions.

10. The method of claim 9, wherein the non-dominated subset of the offspring solutions is combined with a previously generated non-dominated subset, into a larger set of solutions;

wherein the previously generated non-dominated subset being formed by:

the evolutionary algorithm process creating a population of solutions of a certain cardinality by randomly drawing solutions from an initial population archive;

the processing the population of solutions of portfolio allocations includes:

passing the population through a dominance filter;

identifying a non-dominated subset of the population; and

committing the non-dominated subset to a non-dominated solutions archive.

11. The method of claim 10, wherein the larger set of solutions is passed through a non-crowding filter to result in a filtered solutions set, the non-crowding filter removing a subset of solutions that is densely crowded as compared to solutions not in the subset.

12. The method of claim 11, wherein the evolutionary algorithm process includes creating a population of solutions of a first cardinality by randomly drawing solutions from the initial population archive; and

wherein the cardinality of the filtered solutions set may be adjusted by drawing solutions from the solutions archive such that the cardinality matches that of the first cardinality.

13. The method of claim 12, wherein if the cardinality of the filtered solutions set is smaller than the first cardinality, then the first cardinality and the cardinality of the filtered solutions are equalized by drawing and including an appropriate number of solutions from the solutions archive.

14. The method of claim 12, wherein if the cardinality of the filtered solutions set is larger than the cardinality of the first cardinality, then the process includes:

selecting a subset of filtered solutions; and

adjusting the cardinality of the subset of filtered solutions to match the first cardinality by drawing solutions from the solutions archive.

15. The method of claim 12, wherein if the cardinality of the filtered solution set matches the first cardinality, then the cardinality of the filtered solution set is unaltered.

16. The method of claim 12, wherein the method further includes:

determining that adjustment of the cardinality of the filtered solution is necessary; and

adjusting the cardinality of the filtered solution; and

wherein the cardinality of the adjusted filtered solution set becomes the new population of solution and replaces the population of solutions having the first cardinality.

17. The method of claim 16, wherein the evolutionary algorithm process is repeated until the first of:

(a) convergence is achieved, and

(b) allocated computational cycles are exhausted, at which time a final non-dominated solutions archive is generated.

18. The method of claim 17, wherein the final non-dominated solutions archive is passed through a dominance filter to yield the efficient frontier.

19. A system for multi-objective portfolio optimization for use in investment decisions based on competing objectives and a plurality of constraints constituting a portfolio problem, the system comprising:

a population generation portion that generates an initial population of solutions of portfolio allocations;

an initial population archive, the initial population of solutions being committed to the initial population archive;

an evolutionary algorithm processing portion, the evolutionary algorithm processing portion performing a multi-objective process, based on the initial population archive and on multiple competing objectives, to generate an efficient frontier, the multi-objective process using an evolutionary algorithm process, the efficient frontier being used in investment decisioning.

20. The system of claim 19, wherein the multiple competing objectives are governed by risk and return measures.

21. The system of claim 19, wherein the evolutionary algorithm process includes creating a population of solutions of a certain cardinality by randomly drawing solutions from an initial population archive.

22. The system of claim 19, wherein the evolutionary algorithm process includes combining randomly matched pairs of parent solutions to create offspring solutions, and further includes:

a dominance filter, the evolutionary algorithm processing portion passing the subset of offspring solutions through the dominance filter; and identifying a non-dominated subset of the offspring solutions.

23. The system of claim 22, wherein the non-dominated subset of the offspring solutions is combined with a previously generated non-dominated subset, into a larger set of solutions;

wherein the previously generated non-dominated subset being formed by:

the evolutionary algorithm processing portion creating a population of solutions of a certain cardinality by randomly drawing solutions from the initial population archive.

24. The system of claim 23, wherein the larger set of solutions is passed through a non-crowding filter to result in a filtered solutions set, the non-crowding filter removing a subset of solutions that is densely crowded as compared to solutions not in the subset.

25. A computer readable medium for multi-objective portfolio optimization for use in investment decisions based on competing objectives and a plurality of constraints constituting a portfolio problem, the computer readable medium comprising:

a first portion that generates an initial population of solutions of portfolio allocations;

an initial population memory portion, the initial population of solutions being committed to the initial population memory portion; and

an third portion, the third portion performing a multi-objective process, based on the initial population archive and on multiple competing objectives, to generate an efficient frontier, the multi-objective process including a Pareto Sorting Evolutionary Algorithm process, which utilizes a dominance filter, the efficient frontier being used in investment decisioning.

26. A method for multi-objective portfolio optimization for use in investment decisions based on competing objectives and a plurality of constraints constituting a portfolio problem, the method comprising:

generating an initial population of solutions of portfolio allocations;

committing the initial population of solutions to an initial population archive;

performing a multi-objective process, based on the initial population archive and on multiple competing objectives, to generate an efficient frontier, the multi-objective process including a evolutionary algorithm process, the evolutionary algorithm process utilizing a dominance filter, the efficient frontier being used in investment decisioning.

wherein the multiple competing objectives are governed by risk and return measures;

wherein the evolutionary algorithm process includes combining randomly matched pairs of parent solutions to create offspring solutions, and further includes:

passing the subset of offspring solutions through a dominance filter; and

identifying a non-dominated subset of the offspring solutions;

wherein the non-dominated subset of the offspring solutions is combined with a previously generated non-dominated subset, into a larger set of solutions;

wherein the previously generated non-dominated subset being formed by:

the evolutionary algorithm process creating a population of solutions of a certain cardinality by randomly drawing solutions from an initial population archive;

the processing the population of solutions of portfolio allocations includes:

passing the population through a dominance filter;

identifying a non-dominated subset of the population; and

committing the non-dominated subset to a non-dominated solutions archive; and

wherein the larger set of solutions is passed through a non-crowding filter to result in a filtered solutions set, the non-crowding filter removing a subset of solutions that is

densely crowded as compared to solutions not in the subset.